

Work Order ID 160804

160804

Page 1

Thursday, May 04, 2017 11:01:37 AM

Item ID: D350-636-111 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Glacier Wearplates
 Start Date: 5/9/2017 Start Qty: 2.00 *2* Cust Item ID:
 Required Date: 5/19/2017 Req'd Qty: 2.00 *2* Customer:
 Reference: (P.A.)SCHEDULED/S

Approvals: Process Plan: PA DAS 21 9-89 Date: 2017/05/04 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr	
DSI 9662	B	JUN 01 2017

100
 100 DOCUMENT CONTROL
 DC Memo 0.00
 Doc.Control -USB or Paperwork Photocopy bluefile & type labels per PPP D350-636-111 CHG001
 JUN 07 2017

110
 110 Pick Kit 0.00
 Packaging Memo 0.00
 Packaging
 JUN 06 2017

120
 120 QC4- 100% Inspect kits for completeness 0.00
 QC Memo 0.06
 Quality Control
 JUN 07 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective : 340				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition 340				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

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Page 2

Thursday, May 04, 2017 11:01:37 AM

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Start Date: 5/9/2017 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 5/19/2017 Req'd Qty: 2.00 ***2*** Customer:
Reference: (P.A.)SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D350-636-111 Location: FS023								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.20							
Quality Control									

DAS 27 9-89 JUN 07 2017

DAS 21 9-89 JUN 07 2017

DAS 21 9-89 JUN 07 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

Thursday, May 04, 2017 11:01:37 AM

160804

D350-636-111

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

JUN 06 2017

DAS
6
9-89

**DAS
27
9-89**

Loc Code

119712

4

DAS
6
9-89

**DAS
27
9-89**

Loc Code

7

153516

4

DAS
6
9-89

**DAS
27
9-89**

Loc Code

5

158907

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Thursday, May 04, 2017 11:01:37 AM

Page 2

Work Order ID: 160804

160804

Parent Item: D350-636-111

D350-636-111

Parent Item Name: Glacier Wearplates

Start Date: 5/9/2017

Required Date: 5/19/2017

Start Qty: 2.00

Required Qty: 2.00

AN3C5A

Purchased

No

110

Each

1,462.000

24

48

AN3C5A

**

CWB

JUN 06 2017

Bolt

DAS
6
9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

FG	5
122800	5
FP001	168
M136450	2
M136579	66
M137164	100
OVER002	1150
M136182	100
M137361	800
M137412	250
ST350	139
M134676	1
M135442	138

48

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Thursday, May 04, 2017 11:01:37 AM

Page 3

Work Order ID: 160804

160804

Parent Item: D350-636-111

D350-636-111

Parent Item Name: Glacier Wearplates

Start Date: 5/9/2017

Required Date: 5/19/2017

Start Qty: 2.00

Required Qty: 2.00

NAS1149C0332R

Purchased

No

110

Each

4,178.000

24

48

NAS1149C0332R

**

CWB

JUN 06 2017

WASHER

DAS
27
9-89

Location

Loc Qty

Loc Code

FP001

86

m136741

46

m137178

40

GA

518

m133284

22

m136444

496

ST260a

3200

m135408

0

m135908

200

m136741

0

m137381

3000

ST266

374

m136643

374

48

Thursday, May 04, 2017 11:01:37 AM

Shop Packet Print

Page 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause			FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐			
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐			
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____						
Misidentified ☐	Past Due ☐							

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D350-636 REV. J
AND INSTRUCTIONS FOR CONTINUING AIRWORTHINESS ICA-D350-636 REV. 3
REF. FAA STC: SR00646SE
REF. CANADIAN STC: SH99-7
REF. EASA STC: 10033942

1.0 PURPOSE

The purpose of this service instruction is to introduce the D350-636-111/-113 Wearplate Kits.

The D350-636-111 Wearplate Kit replaces elements of the D350-636-011/-012/-013/-014 Skidtubes and elements of the D350-636-041/-043/-045 Wearshoe Kit and is designed to improve grip on low friction surfaces such as ice. The components in the D350-636-111 Wearplate Kit are defined in the parts list in Section 2.0.

The D350-636-113 Wearplate Kit replaces elements of the D350-636-015/-016/-017/-018 Skidtubes and elements of the D350-636-047 Wearplate Kit and is designed to improve grip on low friction surfaces such as ice. The components of the D350-636-113 Wearplate Kit are defined in the parts list in Section 2.0

2.0 PARTS LIST

QTY -111	QTY -113	Part Number	Description
X		D350-636-111	WEARPLATE KIT
	X	D350-636-113	WEARPLATE KIT
4		D4923-041	WEARPLATE ASSY
2		D4933-041	WEARPLATE ASSY
2	2	D4934-041	BLADE ASSY
	2	D5146-041	WEARPLATE ASSY
24		AN3C5A	BOLT
	8	AN3C36A	BOLT
	8	MS21043-3	NUT
24	16	NAS1149C0332R	WASHER (AN960C10)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 160804
PA
2017/05/09

B	ADD D350-636-113 WEARPLATE KIT	DB	14.08.21
A	NEW ISSUE	DB	13.09.11
REV.	DESCRIPTION	BY	DATE
DESIGN	DB	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DB		
CHECKED	<i>MKa</i>	DRAWING NO.	REV. B
MFG. APPR.	N/A	WEARPLATE INSTALLATION	SHEET 1 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	DSI 9662	NTS
DATE	14.08.21	COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
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Misidentified ☐	Past Due ☐																																																														

3.0 WEIGHT AND BALANCE

The following are the net weight increases associated with the D350-636-111 and D350-636-113 Kits.

Installation	Weight	LONGITUDINAL		LATERAL (STD GEAR)		LATERAL (HIGH GEAR)	
		Arm	Moment	Arm	Moment	Arm	Moment
*D350-636-111 WEARPLATE KIT	3.82 lb 1.74 kg	132.1 in 3.4 m	504.6 in-lb 5.9 m-kg	0	0	0	0
**D350-636-113 WEARPLATE KIT	1.8 lb 3.96 kg	123.2 in 3.15 m	221.8 in-lb 12.5 m-kg	0	0	0	0

* Weight added to relevant skidtube installation when D350-636-111 Wearplate Kit is installed as replacement on D350-636-011/-012/-013/-014 Skidtubes.

**Weight added to relevant skidtube installation when D350-636-113 Wearplate Kit is installed as replacement on D350-636-015/-016/-017/-018 Skidtubes.

4.0 INSTALLATION OF D350-636-111 WEARPLATE KIT

- 4.1 Refer to Figure 1 on sheet 3 of this Service Instruction. Remove and retain the components indicated per ICA-D350-636, Sections 32.3 and 32.4. Ensure the AN8 fasteners are serviceable.
- 4.2 Inspect skidtube per ICA-D350-636.
- 4.3 Refer to Figure 2 on sheet 3 of this service instruction. Install the D4934-041 Blade Assy. Torque the AN8C21A bolts to 480-690 in-lbs (54.2-78.0 N-m).
- 4.4 Refer to Figure 2 on sheet 3. Install the D4923-041 Wearplate Assy and the D4933-041 Wearplate Assy as shown. Torque the AN3C5A bolts to 15-25 in-lbs (1.7-2.8 N-m).
- 4.5 Repeat this procedure for the other Skidtube.
- 4.6 Adjust Weight and Balance per Section 3.0 of this Service Instruction.

DESIGN	DB	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DB		
CHECKED	<i>MLee</i>	DRAWING NO.	REV. B
MFG. APPR.	N/A	WEARPLATE INSTALLATION SHEET 2 OF 4	
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	DSI 9662	NTS
DATE 14.08.21		COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____



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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
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Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :	
Misidentified ☐	Past Due ☐																																																														

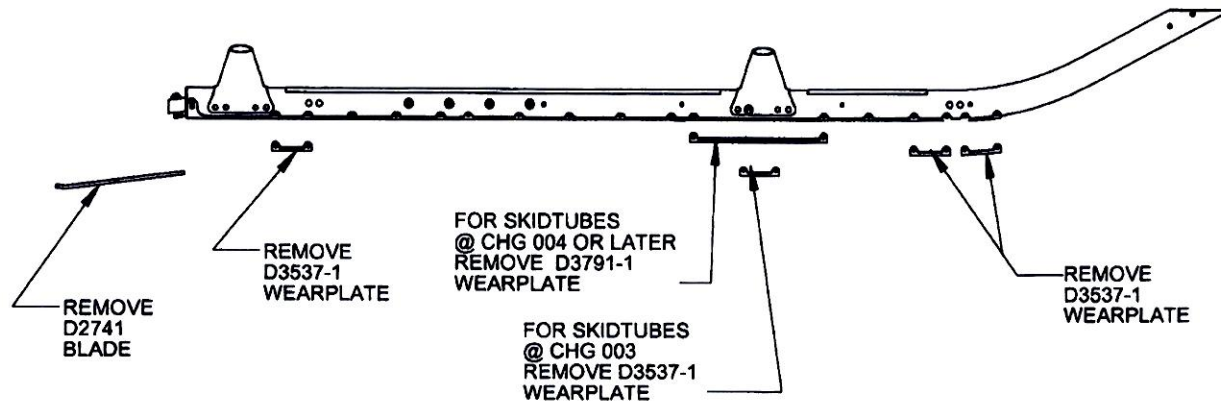


FIGURE 1: BLADE/WEARPLATE REMOVAL

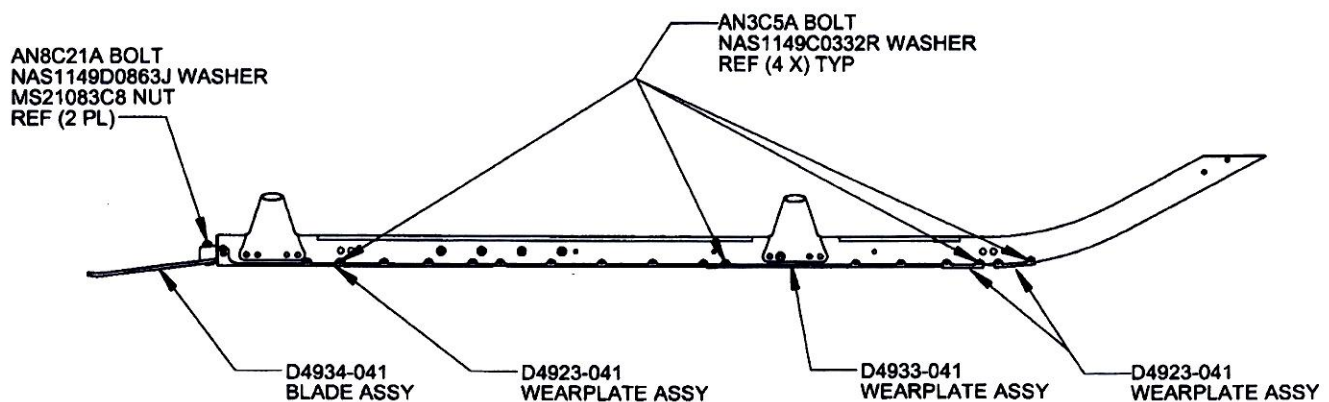


FIGURE 2: D350-636-111 WEARPLATE INSTALLATION

NOTE: THE 2 x D4923-041 WEARPLATES CAN BE INSTALLED IN ANY 2 OF THE 3 LOCATIONS INDICATED IN FIGURE 2 ABOVE. A PARTIAL INSTALL OF THE COMPONENTS PROVIDED IN THE D350-636-111 KIT IS ACCEPTABLE AS LONG AS THE INSTALLATION IS THE SAME ON BOTH SKIDTUBES.

DESIGN	DB	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DB		
CHECKED	<i>mk</i>	DRAWING NO.	REV. B
MFG. APPR.	N/A	WEARPLATE INSTALLATION SHEET 3 OF 4	
APPROVED	<i>SA</i>	TITLE	SCALE
DE APPR.	<i>SA</i>	DSI 9662	NTS
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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

5.0 INSTALLATION OF D350-636-113 WEARPLATE KIT

- 5.1 Refer to Figure 3 below. Remove and retain the components indicated per ICA-D350-636, Sections 32.3 and 32.4. Ensure the AN8 fasteners are serviceable.
- 5.2 Inspect skidtube per ICA-D350-636.
- 5.3 Refer to Figure 4 below. Install the D4934-041 Blade Assy. Torque the AN8C21A bolts to 480-690 in-lbs (54.2-78.0 N-m).
- 5.4 Refer to Figure 4 below. Install the D5146-041 Wearplate Assy as shown. Torque the AN3C36A bolts to 15-25 in-lbs (1.7-2.8 N-m). Torque the AN8C35A bolt to 480-690 in-lbs (54.2-78.0 N-m).
- 5.5 Repeat this procedure for the other skidtube.
- 5.6 Adjust Weight and Balance per Section 3.0.

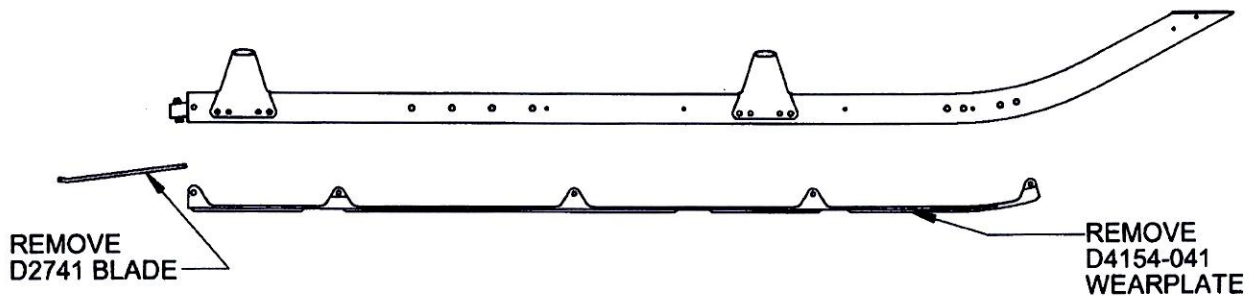


FIGURE 3: BLADE/WEARPLATE REMOVAL
(RETAIN FASTENERS)

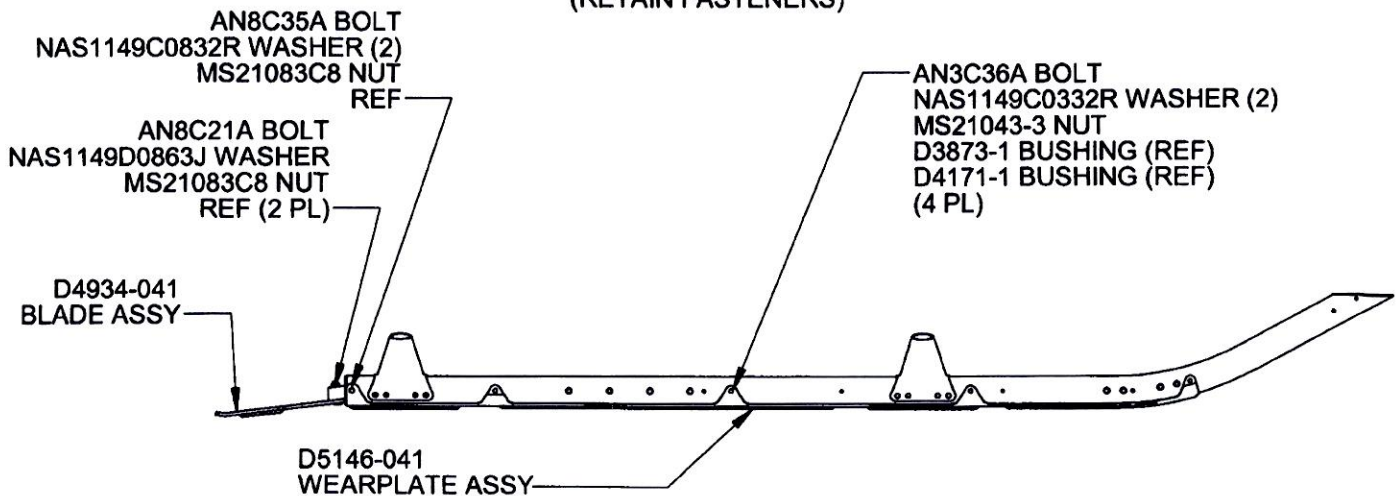


FIGURE 4: D350-636-113 WEARPLATE INSTALLATION

DESIGN	DB	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DB		
CHECKED	<i>MR</i>	DRAWING NO.	REV. B
MFG. APPR.	N/A	WEARPLATE INSTALLATION SHEET 4 OF 4	
APPROVED	<i>MR</i>	TITLE	SCALE
DE APPR.	<i>MR</i>	DSI 9662	NTS
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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

160804

Work Order ID 160804

Thursday, May 04, 2017 11:01:37 AM

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Item ID: D350-636-111

Revision ID:

Item Name: Glacier Wearplates

Start Date: 5/9/2017 Start Qty: 2.00

2

Cust Item ID:

Required Date: 5/19/2017 Req'd Qty: 2.00

2

Customer:

Reference: (P.A.)SCHEDULED/S

Run Start *NR1*

Stop *NR2*

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

DSI 9662

B

JUN 01 2017

0.00

100

100

DOCUMENT CONTROL

0.00

DC

Memo

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D350-636-111 CHG001

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

Memo

0.06

Quality Control

CB

②

JUN 02 2017

United States of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate

Number SR00646SE

This certificate, issued to

**Dart Aerospace USA, Inc.
190 S. Danebo Ave.
Eugene, OR 97402**

*certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part * of the * Regulations.*

Original Product—Type Certificate Number:

* See attached Federal Aviation Administration (FAA)

Make:

Approved Model List (AML) SR00646SE for approved

Model:

aircraft models and applicable airworthiness regulations

Description of the Type Design Change: Replacement of the original landing gear skid tubes with DART D350-636 skid tube system components as appropriate. The D350-636 skid tube system must be fabricated in accordance with DART Aerospace USA, Inc. Master Document List (MDL) No. MDL-D350-636, Revision N, dated September 01, 2010, or later Federal Aviation Administration (FAA) approved Revision. The skid tubes must be installed in accordance with DART Aerospace Installation Instructions No. INN-D350-636, Revision H, dated July 26, 2010, or later FAA accepted revision. This modification must be maintained in accordance with DART Aerospace Instructions for Continued Airworthiness (ICA) No. ICA-D350-636, Revision 1, or later FAA-approved revision.

Limitations and Conditions: Approval of this change in type design applies to rotorcraft listed on the Approved Model List (AML) only. This approval should not be extended to other rotorcraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of the rotorcraft.

A copy of this Certificate, AML No. SR00646SE, and the ICA must be maintained as part of the permanent records for the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: April 24, 1998

Date reissued: October 28, 2015

Date of issuance: November 19, 1998

Date amended: September 27, 2010



By direction of the Administrator

[Signature]
(Signature)

[Signature]
Manager, Seattle Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

DART SERVICE INSTRUCTION

**TO AMEND INSTALLATION INSTRUCTIONS IIN-D350-636 REV. J
AND INSTRUCTIONS FOR CONTINUING AIRWORTHINESS ICA-D350-636 REV. 3
REF. FAA STC: SR00646SE
REF. CANADIAN STC: SH99-7
REF. EASA STC: 10033942**

1.0 PURPOSE

The purpose of this service instruction is to introduce the D350-636-111/-113 Wearplate Kits.

The D350-636-111 Wearplate Kit replaces elements of the D350-636-011/-012/-013/-014 Skidtubes and elements of the D350-636-041/-043/-045 Wearshoe Kit and is designed to improve grip on low friction surfaces such as ice. The components in the D350-636-111 Wearplate Kit are defined in the parts list in Section 2.0.

The D350-636-113 Wearplate Kit replaces elements of the D350-636-015/-016/-017/-018 Skidtubes and elements of the D350-636-047 Wearplate Kit and is designed to improve grip on low friction surfaces such as ice. The components of the D350-636-113 Wearplate Kit are defined in the parts list in Section 2.0

2.0 PARTS LIST

QTY -111	QTY -113	Part Number	Description
X		D350-636-111	WEARPLATE KIT
	X	D350-636-113	WEARPLATE KIT
4		D4923-041	WEARPLATE ASSY
2		D4933-041	WEARPLATE ASSY
2	2	D4934-041	BLADE ASSY
	2	D5146-041	WEARPLATE ASSY
24		AN3C5A	BOLT
	8	AN3C36A	BOLT
	8	MS21043-3	NUT
24	16	NAS1149C0332R	WASHER (AN960C10)

B	ADD D350-636-113 WEARPLATE KIT	DB	14.08.21
A	NEW ISSUE	DB	13.09.11
REV.	DESCRIPTION	BY	DATE
DESIGN	DB	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DB		
CHECKED	<i>mka</i>	DRAWING NO.	REV. B
MFG. APPR.	N/A	WEARPLATE INSTALLATION SHEET 1 OF 4	
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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